

REMARKS

In the Office Action, claims 1-35 and 40-44 were pending. Claims 1-17, 19-29, 31-35 and 40-44 were rejected. Claims 18, 30, 40 and 42 were objected to. Via the amendments in this response, claims 40-43 have been cancelled.

I. Claim Objections

In the Office Action at page 2, claim 40 was objected to under 37 CRR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 40 has been cancelled via amendment so this objection is no longer relevant.

II. Claim Rejections under 35 U.S.C. § 103

In the Office Action at page 2, claims 1-17, 19-29, 31-35 and 40-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,582,455 (Casariego). The Examiner stated that Casariego fails to teach any examples or compositional ranges that are sufficiently specific to anticipate the compositional limitations of claims 1-17, 19-29, 31-35 and 40-44. However, the Examiner stated that overlapping ranges have been held to establish prima facie obviousness. The Examiner further stated that "there is nothing of record to suggest that the addition of Cr_2O_3 to the present invention would materially affect the novel or basic characteristics of the present invention. Accordingly, the "consisting essentially of" claim language does not exclude Cr_2O_3 from the claims." Applicants respectfully traverse the rejection.

A. The Present Invention

The present invention as recited in claim 1 is a blue colored, infrared and ultraviolet radiation absorbing glass composition having a composition comprising a base glass portion comprising: SiO_2 66 to 75 percent by weight, Na_2O 10 to 20 percent by weight, CaO 5 to 15 percent by weight, MgO 0 to 5 percent by weight, Al_2O_3 0 to 5 percent by weight, and K_2O 0 to 5 percent by weight, and a primary solar radiation absorbing and colorant portion consisting essentially of: total iron 0.6 to 2 percent by weight, FeO 0.15 to

0.65 percent by weight, CoO 30 to 250 PPM, Se 1 to 15 PPM, TiO₂ 0 to 0.9 percent by weight, and Nd₂O₃ 0 to 3 percent by weight, the glass having a redox in the range of 0.15 to 0.58, wherein at a redox range from 0.15 to 0.4, the range of CoO is from 60 to 250 PPM, and wherein at a redox range greater than 0.4, the CoO is in the range of 30 to 100 PPM, and wherein at a thickness of 0.160 inches, the glass has a luminous transmittance (LTA) of 35% up to 70%, and a color characterized by a dominant wavelength in the range of 479 to 495 nanometers and an excitation purity of at least 4%.

The present invention as recited in claim 23 is a blue colored, infrared and ultraviolet radiation absorbing glass composition having a composition comprising a base glass portion comprising: SiO₂ 66 to 75 percent by weight, Na₂O 10 to 20 percent by weight, CaO 5 to 15 percent by weight, MgO 0 to 5 percent by weight, Al₂O₃ 0 to 5 percent by weight, and K₂O 0 to 5 percent by weight, and a primary solar radiation absorbing and colorant portion consisting essentially of: total iron 0.6 to 2 percent by weight, FeO 0.15 to 0.65 percent by weight, CoO 30 to 250 PPM, Se 1 to 15 PPM, TiO₂ 0 to 0.9 percent by weight, and Nd₂O₃ 0 to 3 percent by weight, the glass having a redox in the range of 0.15 to 0.55, wherein at a redox range from 0.15 to 0.4, the range of CoO is from 60 to 250 PPM, and wherein at a redox range greater than 0.4, the CoO is in the range of 30 to 100 PPM and wherein at a thickness of 0.154 inches, the glass has a luminous transmittance (LTA) of 35% up to 60%, a total solar ultraviolet transmittance (TSUV) of 55 percent or less, a total solar infrared transmittance (TSIR) of 35 percent or less, a total solar energy (TSET) transmittance of 55 percent or less; and a color characterized by a dominant wavelength in the range of 479 to 495 nanometers and an excitation purity of at least 4%.

The present invention as recited in claim 34 is an automotive transparent glazing panel comprising at least one transparent panel selected from side and back transparent panels that is a blue colored, infrared and ultraviolet radiation absorbing glass composition having a composition comprising a base glass portion, comprising: SiO₂ 66 to 75 percent by weight, Na₂O 10 to 20 percent by weight, CaO 5 to 15 percent by weight, MgO 0 to 5

percent by weight, Al_2O_3 0 to 5 percent by weight, and K_2O 0 to 5 percent by weight, and a primary solar radiation absorbing and colorant portion consisting essentially of: total iron 0.6 to 2 percent by weight, FeO 0.15 to 0.65 percent by weight, CoO 30 to 250 PPM, Se 1 to 15 PPM, Nd_2O_3 0 to 3 percent by weight, and TiO_2 0 to 0.9 percent by weight, the glass having a redox in the range of 0.15 to 0.58, wherein at a redox range from 0.15 to 0.4, the range of CoO is from 60 to 250 PPM, and wherein at a redox range greater than 0.4, the CoO is in the range of 30 to 100 PPM and wherein the glass has a luminous transmittance (LTA) of 35% up to 60%, and a color characterized by a dominant wavelength in the range of 479 to 495 nanometers and an excitation purity of at least 4% at a thickness of 0.160 inches, wherein the glazing panel has a thickness in the range of 1.5 to 10 millimeters.

B. The Casariego Reference

The Casariego reference discloses a glazing set mounted on an automobile vehicle, comprising a windscreen, front side windows and rear side windows and a rear window, wherein each of the rear side windows, both movable and fixed, and the rear window comprise a glazing pane comprising a colored glass sheet having a thickness of from 2 to 8 millimeters, wherein the colored glass sheet has a composition and, consisting essentially of, as coloring agents: from 0.5 to 1.5% Fe_2O_3 (total iron) with FeO content representing from 16 to 55% of the total iron content expressed in the form of Fe_2O_3 ; from 0.003 to 0.015% CoO ; from 0.025 to 0.09% Cr_2O_3 ; and from 0 to 0.0025% Se .

C. Traversal of the Rejection

For a proper rejection under 35 U.S.C. § 103, the PTO must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. See In re Fine, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification of the prior art must have had a reasonable expectation

of success, determined from the vantage point of the skilled artisan at the time the invention was made. See Amgen, Inc., 927 F.2d 1200, 1209, 18 U.S.P.Q.2d 1016, 1023 (Fed Cir. 1991). Lastly, the prior art reference or combination of references must teach or suggest all the limitations of the claims. See In re Wilson, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

The present invention as recited in claim 1 is a blue colored, infrared and ultraviolet radiation absorbing glass composition having a composition comprising a primary solar radiation absorbing and colorant portion **consisting essentially of** total iron 0.6 to 2 percent by weight, FeO 0.15 to 0.65 percent by weight, CoO 30 to 250 PPM, Se 1 to 15 PPM, TiO₂ 0 to 0.9 percent by weight, and Nd₂O₃ 0 to 3 percent by weight. The blue glass composition has a dominant wavelength in the range of 479-495 nm. The transition language "consisting essentially of" renders the claim open for the inclusion of only unspecified ingredients that do not materially affect the basic and novel characteristics of the claimed composition. Dow Chem. Co. v. American Cyanamid Co., 615 F. Supp. At 484, 229 U.S.P.Q. at 180. Such an unspecified ingredient would not include a known colorant such as Cr₂O₃. Because the consisting essentially of language relates to the colorant portion of the composition, it clearly intends to exclude other materials acting as colorants from the composition.

In contrast to the present invention, Casariego teaches a composition for a glass sheet that contains from 0.025 to 0.09% Cr₂O₃.

The inclusion of a well known, green colorant such as Cr₂O₃ in the glass composition of the present invention would move the dominant wavelength of the glass composition outside of the claimed range (479-495 nm) downward toward the 460-465 nm range. If Cr₂O₃ was included as a colorant in the composition of claim 1, the amount of each constituent would have to be changed in order to drive the color from the lower wavelength green coloration (caused by the addition of Cr₂O₃) towards the desired blue coloration. Hence, the present invention as recited in claim 1 includes a

combination of colorants exclusive of Cr_2O_3 to exhibit a specified dominant wavelength.

Because Casariego does not teach or suggest all the limitations of the claims, specifically, a primary solar radiation absorbing and colorant portion of a glass composition that does not contain Cr_2O_3 , claim 1 is patentably distinguishable over the cited reference. Further, Casariego does not disclose the glass composition comprising the primary and radiation absorbing and colorant portion of claim 1 having a luminous transmittance of 35% up to 70%. As a result, Applicants respectfully request the withdrawal of the rejection of claim 1 under 35 U.S.C. § 103.

Claims 2-17, 19-22 and 44 directly or indirectly depend on claim 1 and recite the present invention in varying scope. Applicants have discussed above how claim 1 is patentably distinguishable over the references of record and claims 2-17, 19-22 and 44 are similarly distinguishable. As a result, Applicants respectfully request the withdrawal of the rejection of claims 2-17, 19-22 and 44 under 35 U.S.C. § 103.

The present invention as recited in claim 23 is a blue colored, infrared and ultraviolet radiation absorbing glass composition having a composition comprising a primary solar radiation absorbing and colorant portion as described above. As discussed above, Casariego does not teach or suggest all the limitations of the claims, specifically, a primary solar radiation absorbing and colorant portion of a glass composition that does not contain Cr_2O_3 . Further, Casariego does not disclose the glass composition comprising a primary and radiation absorbing and colorant portion of claim 23 that has the following properties at a thickness of 0.154 inches: a total solar ultraviolet transmittance of 55 percent or less and a total solar infrared transmittance of 35 percent or less. As a result, Applicants respectfully request the withdrawal of the rejection of claim 23 under 35 U.S.C. § 103.

Claims 24-29 and 31-33 directly or indirectly depend on claim 23 and recite the present invention in varying scope. Applicants have discussed above how claim 23 is patentably distinguishable over the references of record and claims 24-29 and 31-33 are similarly distinguishable. As a result,

Applicants respectfully request the withdrawal of the rejection of claims 24-29 and 31-33 under 35 U.S.C. § 103.

The present invention as recited in claim 34 is an automotive transparent glazing panel as described above. As discussed above, Casariego does not teach or suggest all the limitations of the claims, specifically, an automotive transparent glazing made of a glass composition having a radiation absorbing and colorant portion that does not contain Cr_2O_3 . Further, Casariego does not disclose the automotive transparent glazing panel having a glass composition comprising a primary and radiation absorbing and colorant portion of claim 34 that has the specified properties such as a luminous transmittance between 35% and 60%. As a result, Applicants respectfully request the withdrawal of the rejection of claim 34 under 35 U.S.C. § 103.

Claim 35 depends on claim 34 and recites the present invention in varying scope. Applicants have discussed above how amended claim 34 is patentably distinguishable over the references of record and claim 35 is similarly distinguishable. As a result, Applicants respectfully request the withdrawal of the rejection of claim 35 under 35 U.S.C. § 103.

III. Allowable Subject Matter

In the Office Action at page 5, claims 18 and 30 were objected to as being dependent upon a rejected. The Examiner stated that if the claims were rewritten in independent form including all of the limitations of the base claim, they would be allowable. The Examiner further stated that the total solar ultraviolet transmittance, total solar infrared transmittance, total solar energy transmittance, dominant wavelength and excitation purity as recited in claims 18 and 30 renders the claims allowable.

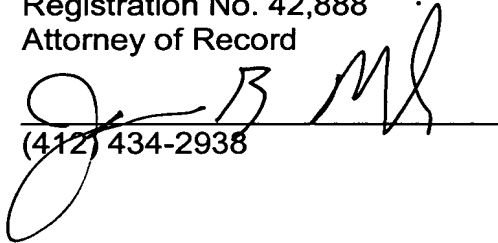
Because claims 18 and 30 depend upon allowable independent claims, we have chosen not to write them in independent form at this time.

IV. CONCLUSION

In light of the amendments and remarks presented in this correspondence, Applicants respectfully request withdrawal of the rejection of claims 1-17, 19-29, 31-35 and 44 under 35 U.S.C. 103(a) as being unpatentable over Casariego and allowance of claims 1-35 and 44. If any questions remain about this application, the Examiner is requested to contact Applicant's attorney at the telephone number provided below. Thank you.

Respectfully submitted,

JACQUES B. MILES
Registration No. 42,888
Attorney of Record


(412) 434-2938

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